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On Gakhov's radius for some classes of functions

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Abstract

© 2015, Pleiades Publishing, Ltd. We introduce Gakhov's radius as the radius of the largest circle rE, $0 < r \le 1$, $E = \{\zeta: |\zeta| < 1\}$, inside of which the external inverse boundary value problem possesses unique solution. We find the Gakhov's radius and convexity radius for several classes of functions, in particular, for the class of Nuzhin's functions, the class of Zhukovskii's airfoils, and the class of functions characterized by the inequality $\mathrm{Re}(\zeta f''(\zeta)/f'(\zeta)) \ge A$, $A \ge 1$, $\zeta \in E$.

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Keywords

external inverse boundary value problem, Gakhov's radius, mapping radius, uniqueness radius